



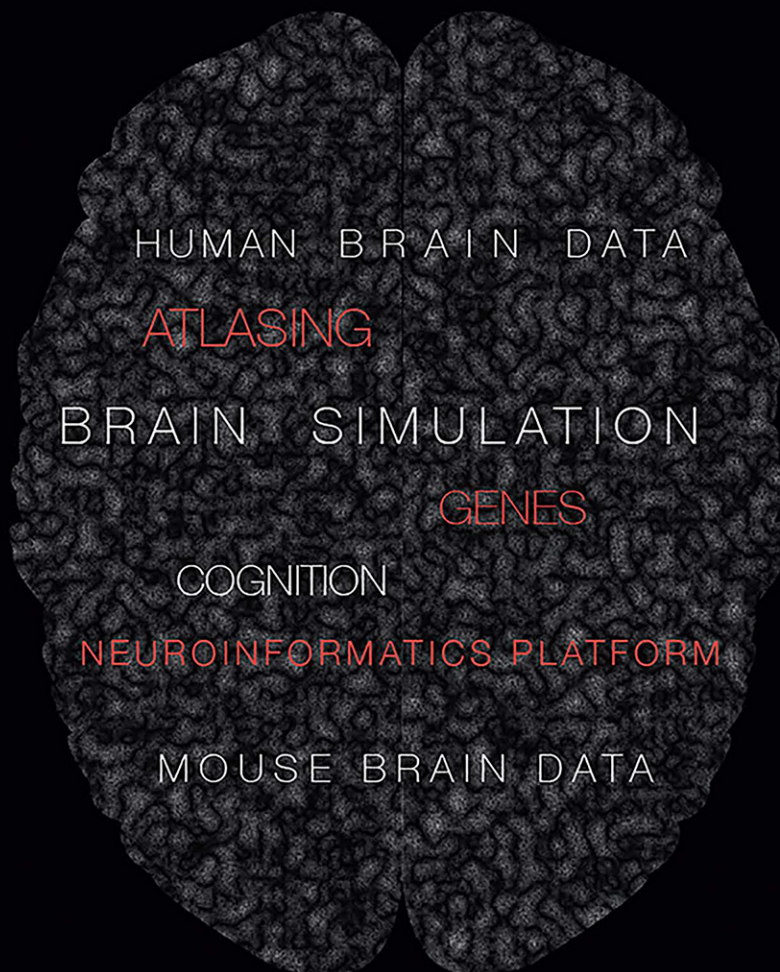
Human Brain Project  
Education Programme

# 3<sup>rd</sup> HBP Education School **FUTURE NEUROSCIENCE**

THE MULTISCALE BRAIN:  
FROM GENES TO BEHAVIOUR

Obergurgl University Centre, Austria  
28 November - 4 December 2016

**Application Deadline:**  
7 September 2016



## SCIENTIFIC PROGRAMME

*This programme may be subject to changes.*

For detailed information and application visit:  
[education.humanbrainproject.eu/web/third-hbp-school](http://education.humanbrainproject.eu/web/third-hbp-school)

Education Programme contact:  
[education@humanbrainproject.eu](mailto:education@humanbrainproject.eu)



MEDIZINISCHE  
UNIVERSITÄT  
INNSBRUCK



ALLEN INSTITUTE for  
BRAIN SCIENCE

Co-funded by  
the European Union



## Scientific Programme:

Understanding the brain requires an integrated understanding of different scales of organisation spanning genes, channels, cells, microcircuits, brain regions and their roles in behaviour from perception to action and in different states including wakefulness and sleep. This course will take the student through the latest data, models and techniques for investigating the different levels of the brain and through the process of putting the pieces together to derive new insights and theories. Workshops each day will guide the student with hands-on experience with the state-of-the-art tools and techniques for neuroinformatics, analysis, modelling and simulation.

This school is jointly organised by the **Human Brain Project (HBP)** and the **Allen Institute for Brain Science (AI)**.

The morning sessions are lecture style and the afternoon and evening sessions are tutorial style.

### Monday 28 November: Arrival Day

16:00 - 18:30

Registration

18:30 - 19:00

Welcome reception

19:00 - 20:30

Dinner

20:30 - 21:30

Jane Roskams (AI), Alois Saria (MUI), Sean Hill (EPFL)

Introduction and welcome address

12:15 - 15:30

Break: Lunch, time for skiing

15:30 - 16:00

Coffee break

16:00 - 17:30

Werner van Geit (EPFL),  
Elisabetta Iavarone (EPFL),  
Costas Anastassiou (AI)

Cell types data and modelling

17:30 - 19:00

Werner van Geit (EPFL),  
Elisabetta Iavarone (EPFL),  
Costas Anastassiou (AI)

Cell types data and  
modelling - continued

19:00 - 20:30

Dinner

20:30 - 22:00

Student lightning talks /  
poster session I

11:00 - 12:15

Saskia De Vries (AI)

Structure, function, behaviour

12:15 - 15:30

Break: Lunch, time for skiing

15:30 - 16:00

Coffee break

16:00 - 17:30

Terri Gilbert (AI)

Navigating the mouse gene  
expression data

17:30 - 19:00

Terri Gilbert (AI)

Navigating the cognitivity  
atlases

19:00 - 20:30

Dinner

20:30 - 22:00

Student lightning talks /  
poster session II

### Tuesday 29 November: Genetic Mapping

08:00 - 09:15

Vilas Menon (AI)

Relating whole brain gene  
expression and single cell  
transcriptome to predict  
cellular composition

09:15 - 10:30

Speaker tbc

Genetic dissection of neural  
circuits

10:30 - 11:00

Coffee break

11:00 - 12:15

Costas Anastassiou (AI)

Modelling of mouse and  
human circuits

### Wednesday 30 November: Cellular and Circuit Mapping

08:00 - 09:15

Speaker tbc

Brain-wide single cell  
reconstructions

09:15 - 10:30

Forrest Collmann (AI)

Synaptic mapping

10:30 - 11:00

Coffee break

### Thursday 1 December: Multiscale Behaviour

08:00 - 09:15

Francesco Pavone (LENS)

Whole brain  
morphofunctional imaging

09:15 - 10:30

Alain Destexhe (CNRS)

Multiscale modelling

10:30 - 11:00

Coffee break



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7 September 2016

11:00 - 15:30

Break: Lunch, time for skiing,

15:30-16:00

Coffee break

16:00 - 17:30

**Terri Gilbert (AI)**

Navigating the human gene expression data

17:30 - 19:00

**Terri Gilbert (AI)**

Accessing the cell types and brain observatory datasets

19:00 - 20:30

Dinner

20:30 - 22:00

**Terri Gilbert (AI)**

Group projects using the Allen Institute resources

## Friday 2 December: Whole Brain Atlases and Modelling

08:00 - 09:15

**Sean Hill (EPFL)**

The Blue Brain Project

09:15 - 10:30

**Simon Eickhoff (FZ JUELICH)**

Human brain atlasing

10:30 - 11:00

Coffee break

11:00 - 12:15

**Speaker tbc**

Mouse whole brain modelling

12:15 - 15:30

Break: Lunch, time for skiing

15:30 - 16:00

Coffee break

16:00 - 17:30

**Jane Roskams (AI)**

Enhancing and embracing diversity in teamwork in neuroscience

17:30 - 19:00

**Eilif Muller (EPFL)**

Modelling microcircuits

19:00 - 20:30

Dinner

20:30 - 22:00

**Armando Romani (EPFL),  
Eilif Muller (EPFL)**

Modelling brain regions

## Saturday 3 December: Cross-species and Clinical Translation

08:00 - 09:15

**Ferath Kherif (CHUV)**

Defining disease signatures

09:15 - 10:30

**Jack Waters (AI)**

Mesoscale mapping

10:30 - 11:00

Coffee break

11:00 - 12:15

**Huib Mansvelder (VU)**

Human cellular morphology and electrophysiology

12:15 - 15:30

Break: Lunch, time for skiing

15:30-16:00

Coffee break

16:00 - 17:30

**Tutor tbc**

Modelling human neurons

17:30 - 19:00

**Tutor tbc**

Defining disease signatures

19:00 - 20:30

Dinner

20:30 - 22:00

Farewell

## Sunday 4 December: Departure Day

This school is open to the whole student community and early post-docs upon application. Abstract submissions for presenting the applicants' own work are particularly welcome. Applications from young female investigators are highly encouraged.

**There is no registration fee.**

### Scientific Committee:

Alois Saria,  
Sean Hill | HBP

Jane Roskams,  
Terri Gilbert | Allen Institute

### Organisers:

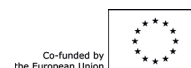
Viktoria Tipotsch,  
Theresa Rass | MUI

### Contact:

education@humanbrainproject.eu



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